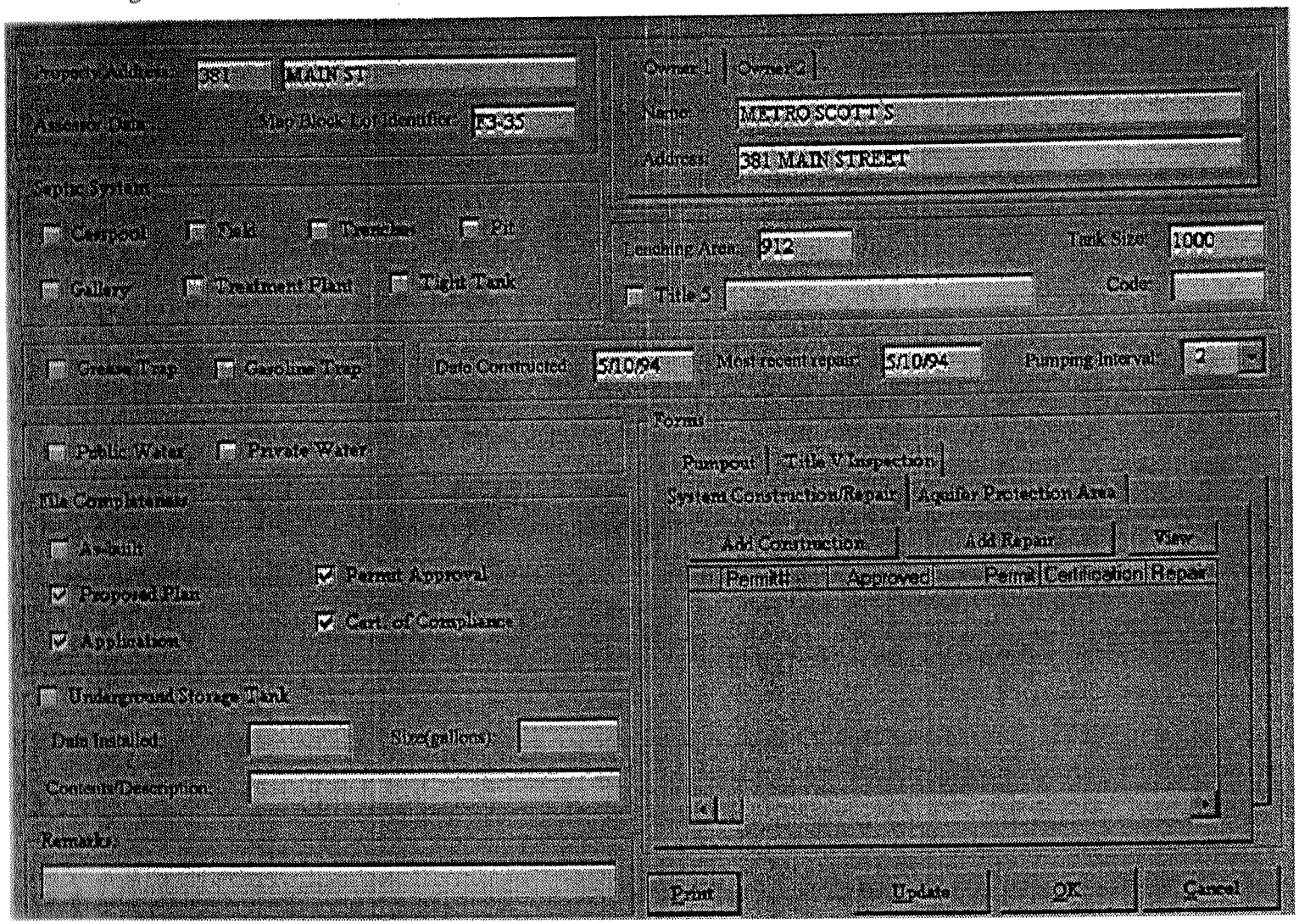
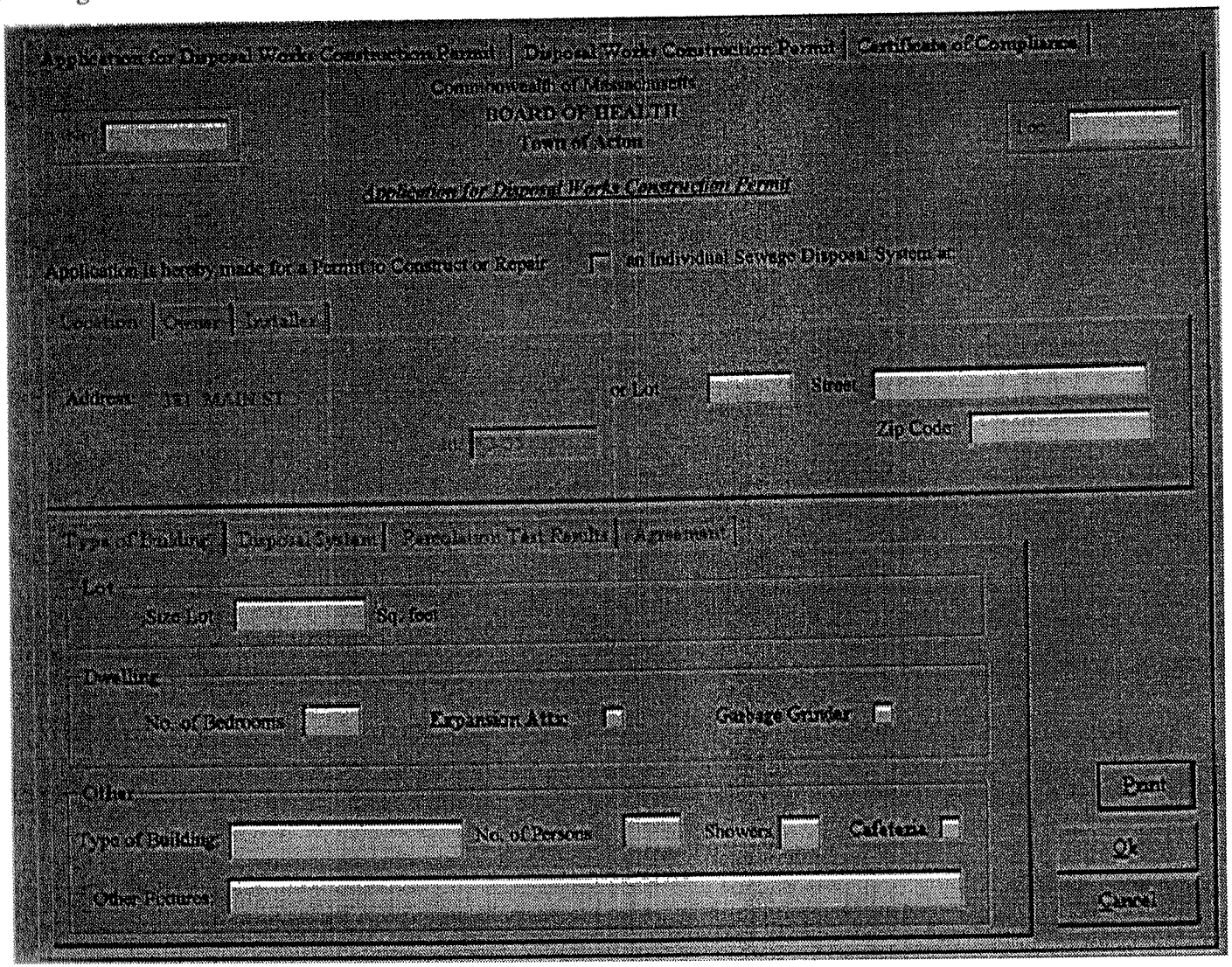
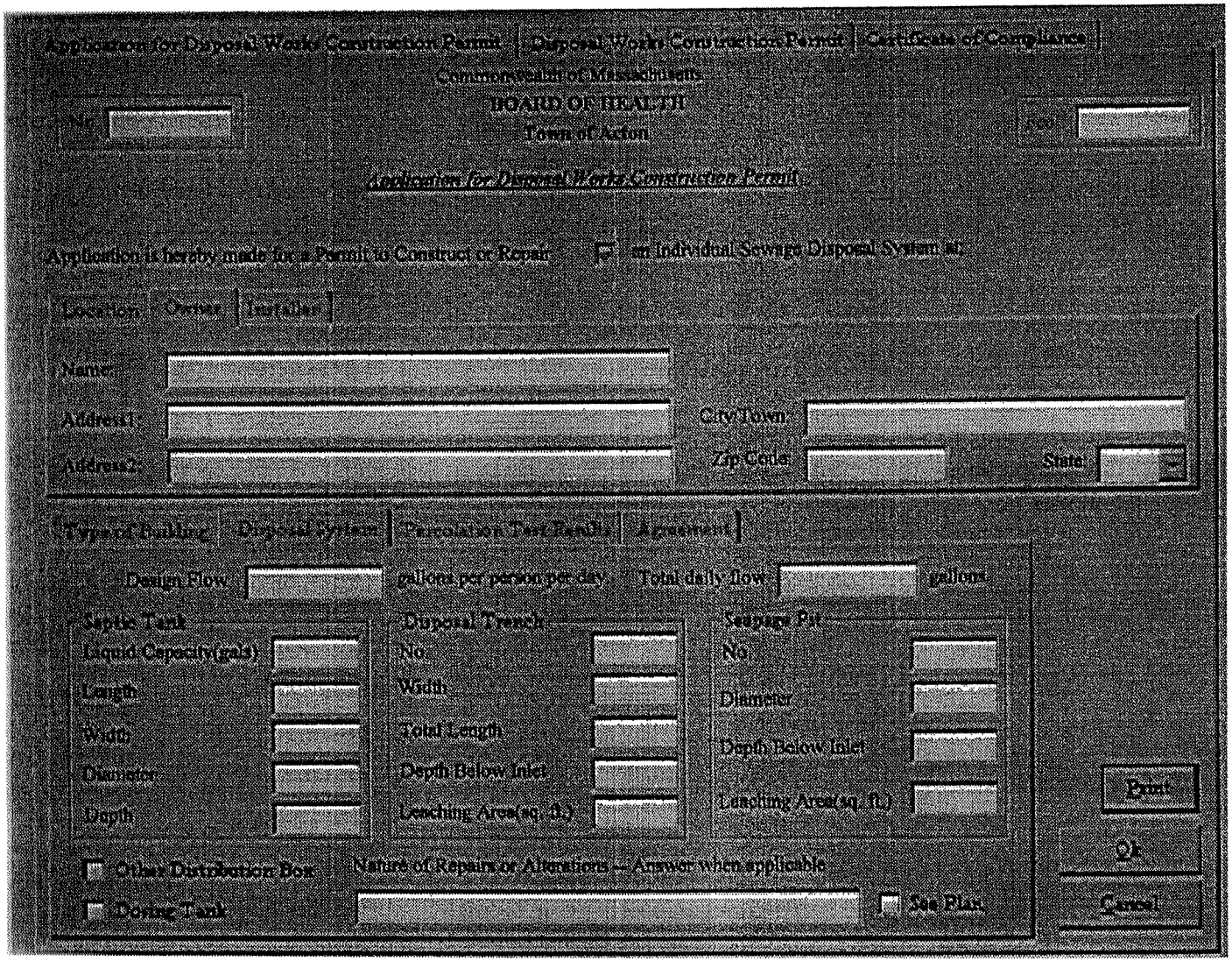
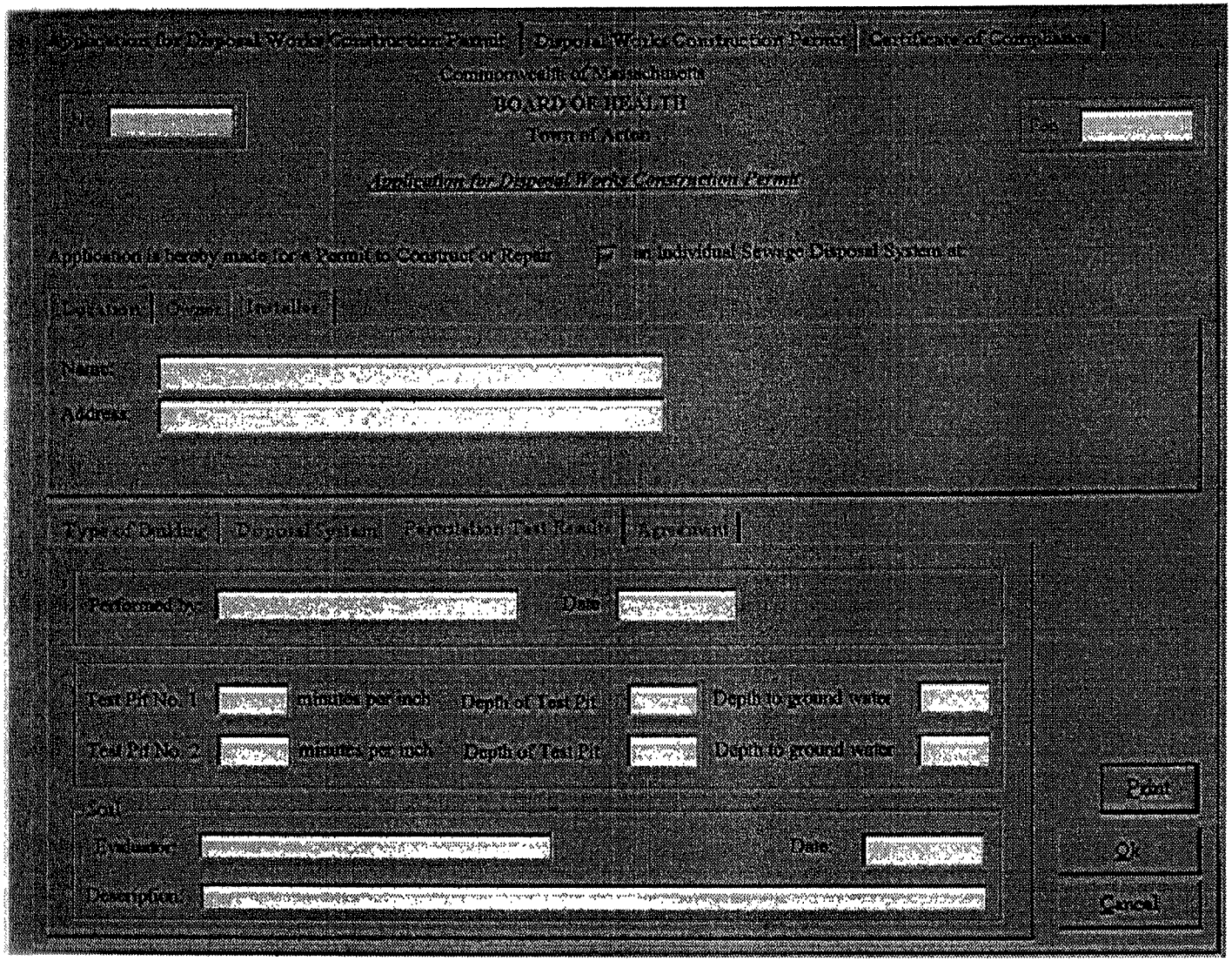
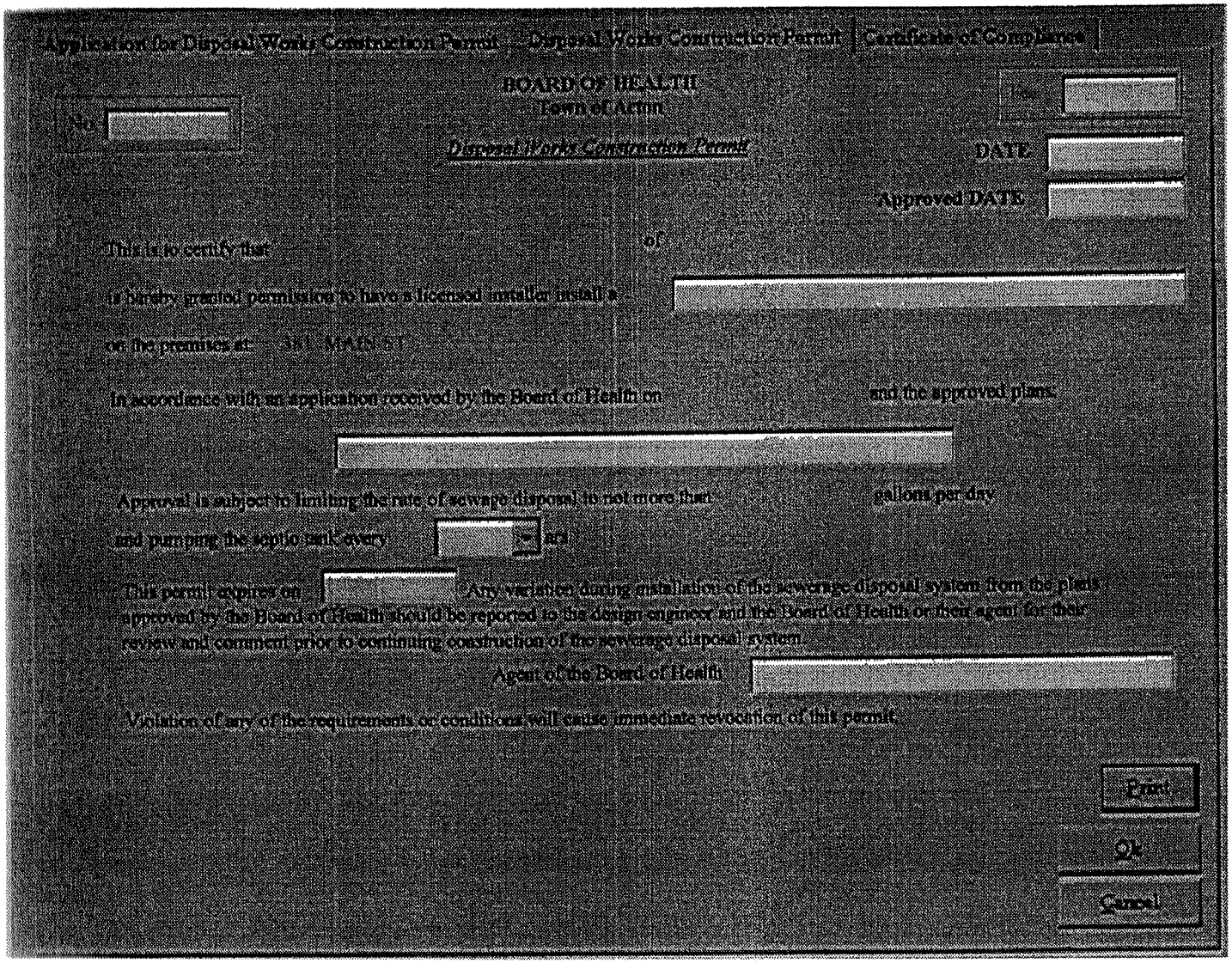
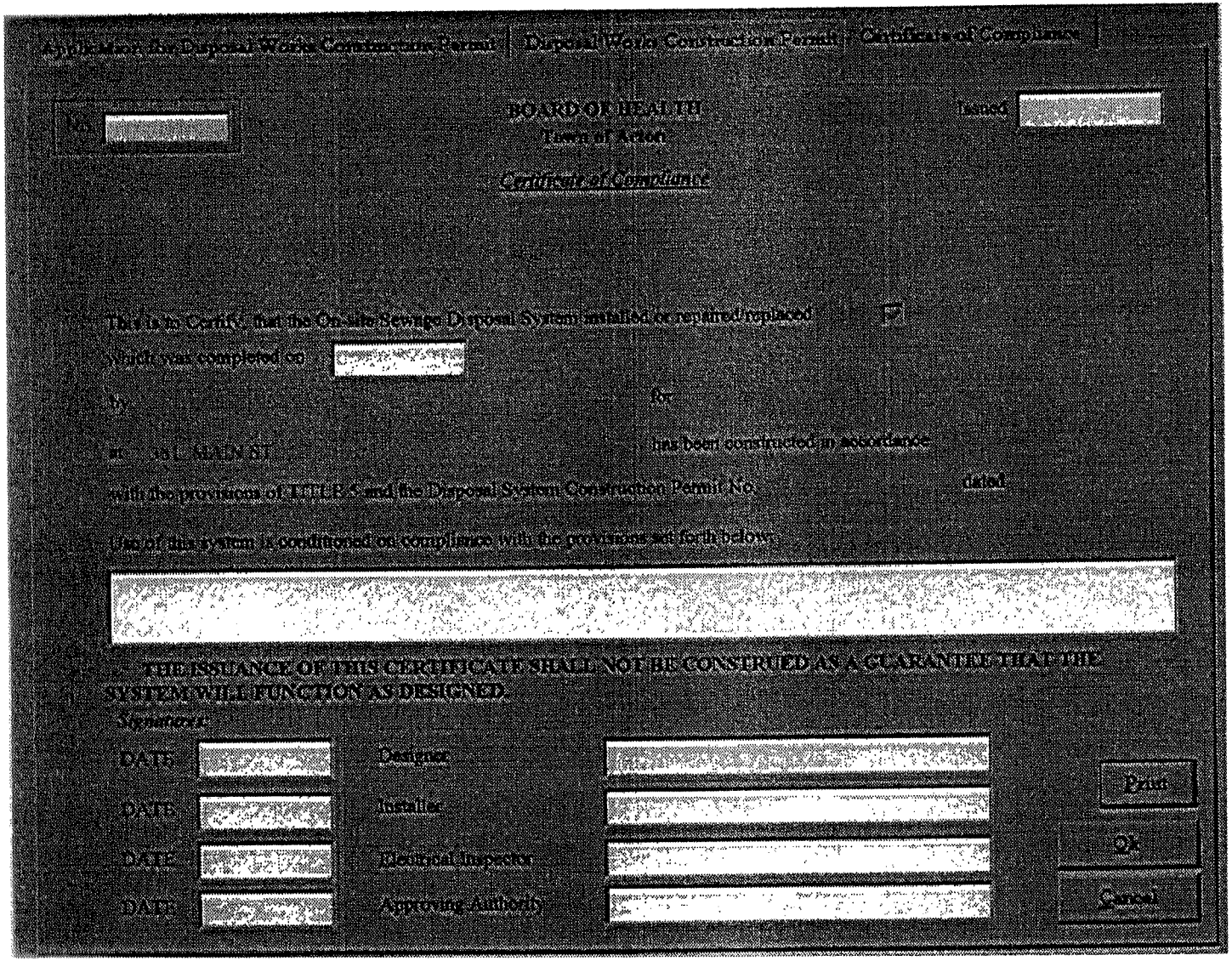

Property Address: 381 MAIN ST
Assessor Data:
Map Block Lot Identifier: 33-35
Owner 1
Owner 2
Name: METRO SCOTT S
Address: 381 MAIN STREET
Septic System:
Cesspool
Tank
Trenches
Pit
Gallery
Treatment Plant
Tight Tank
Leaching Area: 912
Tank Size: 1000
Title 5
Code:
Grease Trap
Gasoline Trap
Date Constructed: 5/10/94
Most recent repair: 5/10/94
Pumping Interval: 2
Public Water
Private Water
File Completeness:
As-built
Proposed Plan
Application
Permit Approval
Cert. of Compliance
Underground Storage Tank
Date Installed:
Size(gallons):
Contents/Description:
Remarks:
Forms:
Pumpout
Title V Inspection
System Construction/Repair
Aquifer Protection Area
Add Construction
Add Repair
View
Permit#
Approved
Permit
Certification
Repair
Print
Update
OK
Cancel

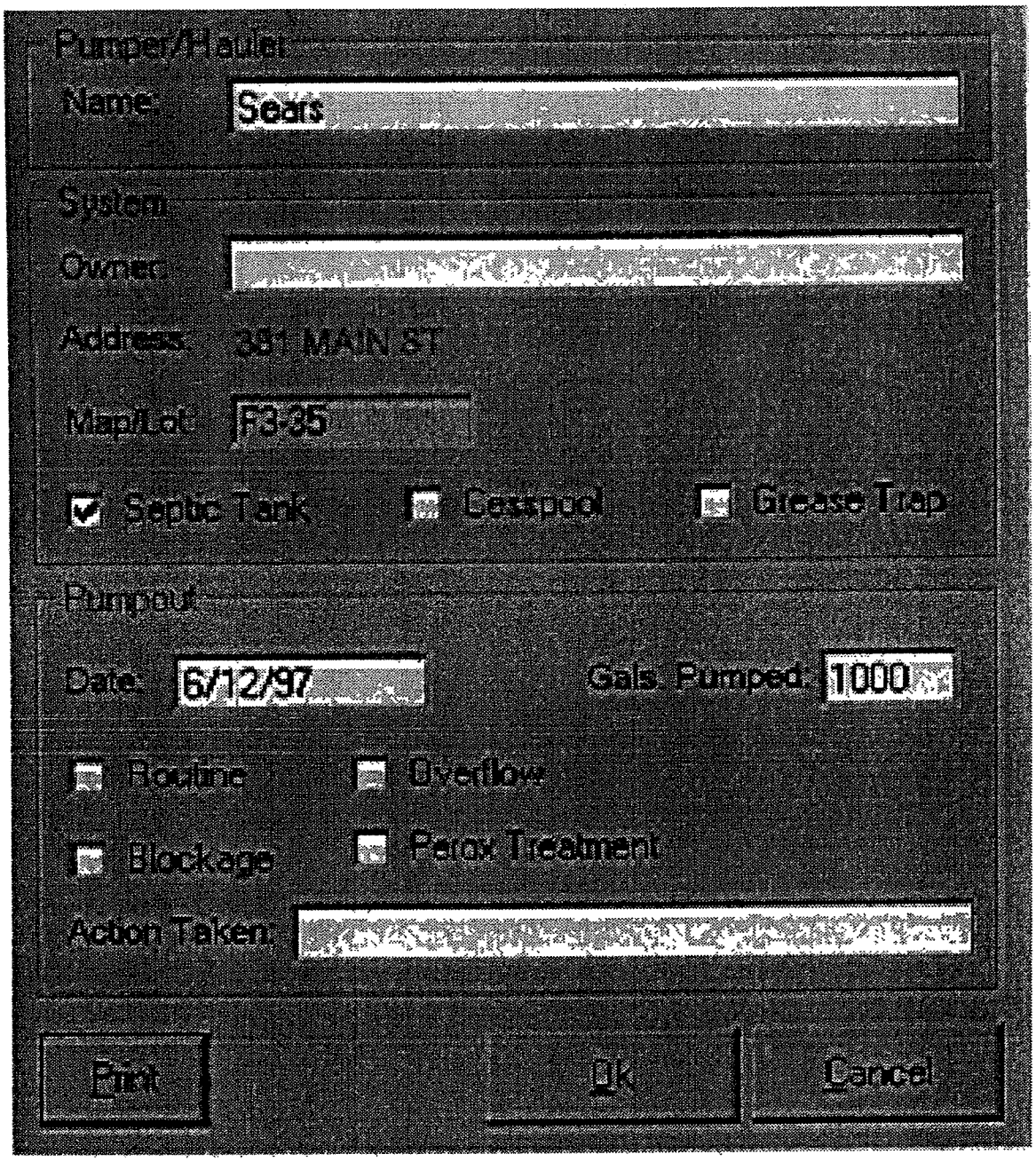

Application for Disposal Works Construction Permit
Disposal Works Construction Permit
Certificate of Compliance
Commonwealth of Massachusetts
BOARD OF HEALTH
Town of Acton
Application for Disposal Works Construction Permit
Application is hereby made for a Permit to Construct or Repair
an Individual Sewage Disposal System at
Location
Owner
Installer
Address
or Lot
Street
Zip Code
Type of Building
Disposal System
Percolation Test Results
Assessment
Lot
Size Lot
Sq. feet
Dwelling
No. of Bedrooms
Expansion Attic
Garbage Grinder
Other
Type of Building
No. of Persons
Showers
Cafeteria
Other Features
Print
OK
Cancel

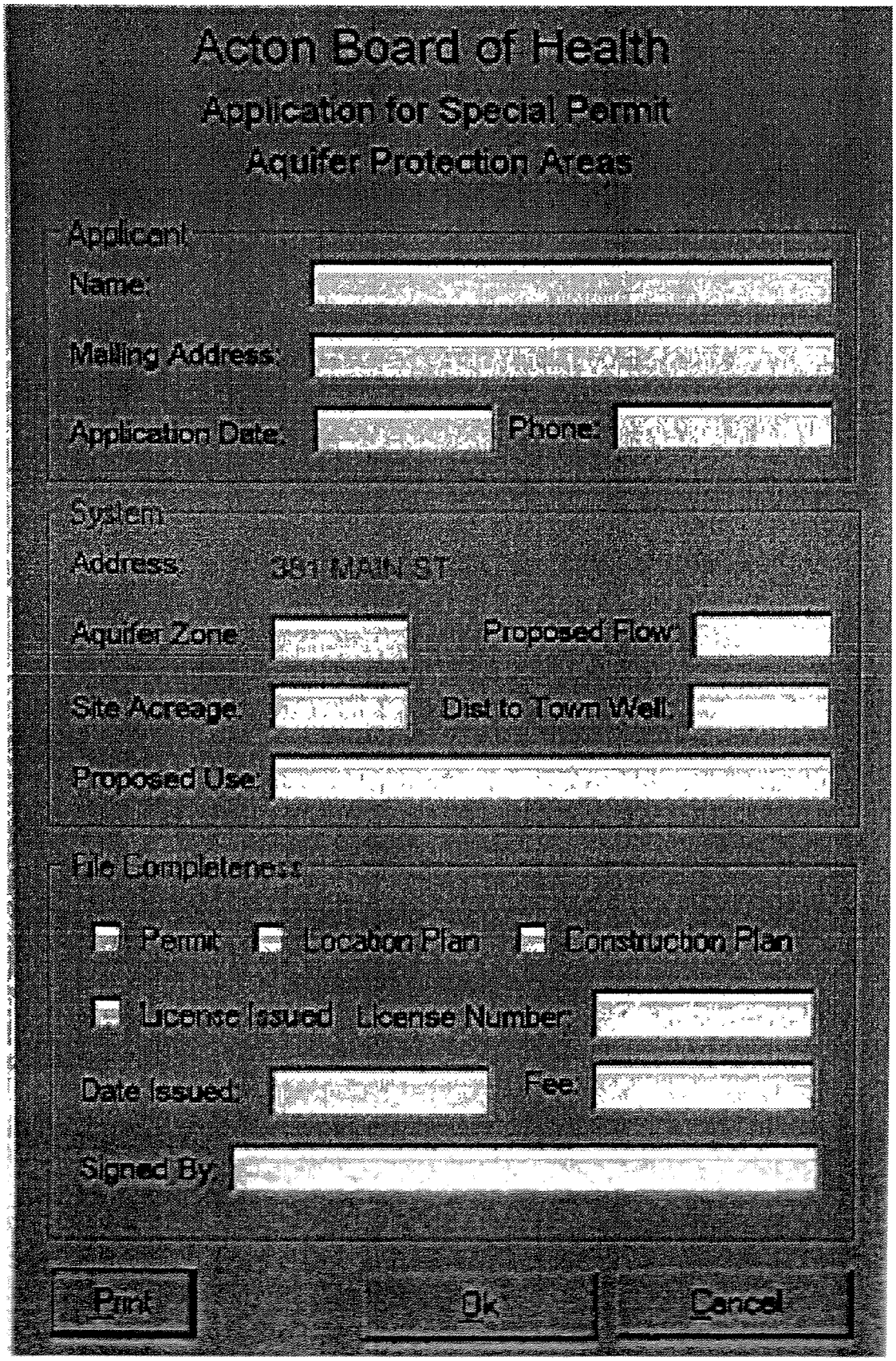

Application for Disposal Works Construction Permit
Disposal Works Construction Permit
Certificate of Compliance
Commonwealth of Massachusetts
BOARD OF HEALTH
Town of Acton
No.
Fee
Application for Disposal Works Construction Permit
Application is hereby made for a Permit to Construct or Repair an Individual Sewage Disposal System at:
Location
Owner
Installer
Name:
Address1:
Address2:
City/Town:
Zip Code:
State:
Type of Building
Disposal System
Percolation Test Results
Agreement
Design Flow
gallons per person per day
Total daily flow:
gallons
Septic Tank
Liquid Capacity(gals)
Length
Width
Diameter
Depth
Disposal Trench
No.
Width
Total Length
Depth Below Inlet
Leaching Area(sq. ft.)
Seepage Pit
No.
Diameter
Depth Below Inlet
Leaching Area(sq. ft.)
Other Distribution Box
Dosing Tank
Nature of Repairs or Alterations -- Answer when applicable
See Plan
Print
OK
Cancel


Application for Disposal Works Construction Permit
Disposal Works Construction Permit
Certificate of Compliance
Commonwealth of Massachusetts
BOARD OF HEALTH
Town of Acton
Application for Disposal Works Construction Permit
Application is hereby made for a Permit to Construct or Repair an Individual Sewage Disposal System at
Location
Owner
Installer
Name
Address
Type of Building
Disposal System
Percolation Test Results
Agreement
Performed by
Date
Test Pit No. 1
minutes per inch
Depth of Test Pit
Depth to ground water
Test Pit No. 2
minutes per inch
Depth of Test Pit
Depth to ground water
Soil
Evaluator
Date
Description
Print
OK
Cancel


Application for Disposal Works Construction Permit
Disposal Works Construction Permit
Certificate of Compliance
BOARD OF HEALTH
Town of Acton
Disposal Works Construction Permit
No.
Date
DATE
Approved DATE
This is to certify that
of
is hereby granted permission to have a licensed installer install a
on the premises at: 311 MAIN ST
In accordance with an application received by the Board of Health on
and the approved plans
Approval is subject to limiting the rate of sewage disposal to not more than
gallons per day
and pumping the septic tank every
yrs
This permit expires on
Any variation during installation of the sewerage disposal system from the plans approved by the Board of Health should be reported to the design engineer and the Board of Health or their agent for their review and comment prior to continuing construction of the sewerage disposal system.
Agent of the Board of Health
Violation of any of the requirements or conditions will cause immediate revocation of this permit.
Print
Ok
Cancel


Application for Disposal Works Construction Permit
Disposal Works Construction Permit
Certificate of Compliance
No.
BOARD OF HEALTH
Town of Acton
dated
Certificate of Compliance
This is to Certify that the On-site Sewage Disposal System installed or repaired/replaced
which was completed on
by
for
at 38 L MAIN ST
has been constructed in accordance
with the provisions of Title 5 and the Disposal System Construction Permit No.
dated
Use of this system is conditioned on compliance with the provisions set forth below:
THE ISSUANCE OF THIS CERTIFICATE SHALL NOT BE CONSTRUED AS A GUARANTEE THAT THE SYSTEM WILL FUNCTION AS DESIGNED.
Signatures:
DATE
Designer
DATE
Installer
DATE
Electrical Inspector
DATE
Approving Authority
Print
Ok
Cancel


Pumper/Hauler
Name: Sears
System
Owner:
Address: 381 MAIN ST
Map/Lot: F3-05
Septic Tank
Cesspool
Grease Trap
Pumpout
Date: 6/12/97
Gals Pumped: 1000
Routine
Overflow
Blockage
Perox Treatment
Action Taken:
Print
Ok
Cancel


Acton Board of Health
Application for Special Permit
Aquifer Protection Areas
Applicant
Name:
Mailing Address:
Application Date:
Phone:
System
Address:
351 MAIN ST
Aquifer Zone:
Proposed Flow:
Site Acreage:
Dist to Town Well:
Proposed Use:
File Completeness
Permit
Location Plan
Construction Plan
License Issued
License Number:
Date Issued:
Fee:
Signed By:
Print
Ok
Cancel

ATTACHMENT "E"

Acton Board of Health

Water Analysis Laboratory

MANUAL

prepared by Sharon Walker Mastenbrook, Sanitarian

March 23, 1995

I. Introduction

A. Purpose of Laboratory

The purpose of the Water Analysis Laboratory is to test natural surface waters and chlorinated recreational waters of Acton for bacterial contamination. Such contamination renders waters capable of transmitting disease to humans. The Water Analysis Laboratory has the capability to evaluate these waters in a short period of time with numerical results.

Water samples are tested for the presence of total coliform and fecal coliform bacteria. The coliform group includes "all of the aerobic and facultative anaerobic, gram-negative, non-sporeforming, rod-shaped bacteria that ferment lactose with gas formation within 48 hours at 350C on an Endo-type medium containing lactose" *(Standard Methods,* p. 9-83). These usually non-pathogenic bacteria are well-studied indicators of the suitability of water for domestic, industrial, recreational, or other uses.

Fecal coliforms are a subgroup of the total coliform group of bacteria. The most common fecal coliform is Escherichia coli (E. Coli). One distinguishing characteristic of E. coli is its ability to incubate at 44.50C, rather than the 350C temperature required to incubate the total coliform group. The higher incubation temperature allows for the testing of water exclusively for fecal coli (because the other coliforms die at 44.50C).

Positive fecal coliform readings indicate the presence of warm-blooded animal waste (agricultural runoff, animal activity, human waste from failed septic systems or sewers). Positive total coliform readings indicate the presence of warm-blooded animal waste as well as the presence of bacteria from non-fecal sources (soil, plants). The significance of these bacteria is that they indicate the potential presence of other disease-causing organisms. These other organisms can be a public health threat.

B. Analysis Method

There are two basic methods for analysis of coliform bacteria: 1) the multiple-tube fermentation procedure and 2) the membrane filter technique. The Laboratory utilizes the membrane filter (MF) technique, a popular, standard method of analysis which allows the direct count of bacteria. The W technique ". . . is highly reproducible, can be used to test relatively large volumes of sample, and yields numerical results more rapidly than the multiple-tube procedure" *(Standard Methods,* p. 9-82).

The MF technique ". . . has limitations, particularly in testing waters with high turbidity and noncoliform (background) bacteria" (p. 9-82).

The MF Technique uses a vacuum procedure to filter coliform bacteria from a measured water sample onto filter paper. The filter is placed in a petri dish with growth medium and incubated for 24 hours. Equipment and supplies for the MF technique come from Millipore of Bedford, Massachusetts.

C. Results

The successful analysis of a water sample yields meaningful results. During incubation any coliform bacteria present on the sample will -row on the filter paper in the petri dish. At the end of 24 hours, the filter is examined. Any colonies growing on the filter are counted. The colonies are visible by the naked eye or by magnification. One assumption behind the counting of the colonies is that each coliform organism will grow one colony. Another assumption is that there is a direct correlation between the number of colonies present and the amount of pollutants in the sample. The count is reported in colony forming units/100 milliliter (CFU/100 ml). Action levels are stated in this unit as well.

Analysis of results for one sampling may indicate the presence of a pollutant. Analysis of results over time and over a large geographic area may also indicate natural seasonal fluctuations in water quality as well as any problem area.

II. Procedures

A. Sample Collection

1. Method of Collection

Samples are collected by the grab or catch method. The sample is placed in a sterile 200 ml (8 oz) polypropylene container with a lid. Samples are taken by placing the container in the hand and scooping out water from the source or by placing the container in a device for holding the container and scooping water from the source.

2. Procedure

Label each container with the location of the sampling site. Record the date and location of each sampling in a Field Log Book. Record any details of each sampling site which seem unusual (odor, very high or low water levels, etc.)

- Plunge container (with opening pointing downward) below the water surface
- Turn container underwater into the current
- Remove container and immediately place lid on container
- Do not place fingers or collection tool into container
- Do not sample from the surface because surface film may contain greater numbers of coliform bacteria than is representative of the water source
- Do not sample sediments because sediments may contain greater numbers of coliform bacteria than is representative of the water source

3. Safety Concerns

Care should be taken to be safe when collecting a sample. Do not collect a sample if conditions are dangerous (too much ice or snow, heavy rain, etc.). Wear rubber gloves, and wash hands after sampling.

B. Sample Storage

In the field, filled sample containers are placed in a wire rack. The rack should be placed inside a cooler with ice or an ice substitute when ambient air temperature exceeds 130C (approximately 560F), but especially in hot weather. Cooling the samples minimizes biodegradation of the samples during transportation.

Samples are brought back to the Board of Health. They are refrigerated until processed. Samples should be processed as soon as possible: within I - 6 hours.

C. Steps of the Sample Analysis

1. Steps for Testing for Total and Fecal Coliforms in Natural and Chlorinated Waters:

- *Put on lab coat* (to prevent media from staining clothes) and disposable plastic gloves (to prevent staining the fingers with media, to prevent touching the sterile petri dishes, and to protect personal health).
- *Turn on both incubators:* The Millipore Desk Top Programmable Incubator (beige) should be set to 44.50C for fecal coliform incubation. The Millipore Laboratory Incubator (blue) should be set to achieve a temperature of 350C for total coliform incubation (setting # 2 on the dial: each number of the dial changes the temperature 50C).
- *Assemble incubation supplies:* media (m-Endo Broth [in petri dish becomes pink] and m-FC-medium [in petri dish becomes purple]), petri dishes, ampoule opener. Have one ampoule of each type of media and two petri dishes per water sample to be analyzed. Place these supplies on the aluminum tray. The tray serves as a work area.
- *Prepare the sterile petri dishes with media:* Label each petri dish by means of a blue grease pencil. Place the contents of one ampoule in one petri dish. Replace the cover to keep dish clean and to keep media from evaporating.
- *Prepare the filtering equipment.* Have alcohol swab and stainless steel forceps available to use when moving filters. Have one filter available for each petri dish to be used. *Always wipe the forceps with alcohol before using them to touch any filter.*

Place neoprene stopper (with glass base inserted) into the filter holder manifold.

Place one Teflon gasket in the recess in the glass base and place stainless steel filter support screen (with the screen surface up) on top of the gasket.

Using forceps (first wiped with alcohol) place one filter centered on each support screen.

Place one glass 300 ml funnel on top of each glass base with filter. Use aluminum spring clamp to hold funnel to base. Make sure the control on the manifold for each filter unit is turned so that the handle is parallel to the floor.

- *Prepare the samples:* Take samples from refrigerator. The samples are in 200 ml containers. Each sample to be tested should consist of 10 ml of sample and 90 ml of distilled water.
  Place 10 ml of sample in the glass funnel. Add 90 ml of distilled water.
  Repeat this procedure for as many samples needing testing.

- *Test the samples:*

Turn on vacuum pump. Check that collection flask is empty and connected to vacuum pump.

Pour one sample into one funnel (10 ml of sample plus 90 ml of distilled water). Turn manifold control to be perpendicular to the floor.

Allow sample to drain through unit. Pour distilled water into the funnel to rinse sides of funnel to dislodge any remaining bacteria. When funnel is empty, return manifold control to closed position (parallel to the floor).

Repeat this process until each filter has had one 100 ml sample pulled through it.

Turn off vacuum pump. Empty collection flask and pour contents into sink.

Open all the petri dishes containing the m-Endo media. Remove the glass funnel from one filtering unit. Using forceps cleaned with alcohol, carefully remove one filter and place grid side up in one petri dish. Close the petri dish and turn over.

Wipe forceps again with alcohol. Place a new filter on the filter support screen. Reassemble the filter unit to be used again.

Repeat the process for all petri dishes with m-Endo.

Pour the remaining diluted samples through the filter units. Place the second group of filters in the petri dishes with m-FC medium.

Place all petri dishes with m-Endo in the beige incubator. Place dishes upside down. Place all petri dishes with m-FC-medium in the blue incubator. Place dishes upside down.

Incubate samples for 18-24 hours.

2. Additional Steps for Testing Chlorinated Waters

When testing chlorinated water for total and fecal coliforms, it is necessary to deactivate the chlorine when the sample is taken. Failure to deactivate the chlorine will result in the possible alteration of the sample so that the sample will not reflect water quality at the time the sample was taken.

Use sterile containers with sodium thiosulfate to deactivate the chlorine. When collecting the sample from a swimming pool, take care to retain the sodium thiosulfate in the container. Plunge the container in the pool water at a depth of at least one meter (approximately 3.5 feet).

Follow sampling procedure and transport as stated above.

D. Reading Petri Dishes and Recording Observed Results

- Put on gloves.
- After the incubation period ends, remove all petri dishes from the incubators.
- Turn off the incubators.
- Turn on fluorescent light with magnification lens in place.
- Record the label of the sample being read
- Remove the top of the petri dish, if necessary.
- Count the number of distinct colonies seen:
  Use the grid on the filter paper to help in counting. Count from top to bottom and right to left. Fecal coliform colonies are blue. Count all distinct blue colonies. Total coliform colonies are red with a metallic (gold)-green sheen. Count all distinct colonies with appropriate sheen. To observe sheen, hold petri dish approximately perpendicular to light.
- In Field Log Book, record the number of colonies observed for each sample. Make any other notes. Because the results are reported in CFU/100 ml, the counted results must be in this unit. Use the following formula to calculate results in the reporting unit:

$$\frac{\text{CFUs counted X 100}}{\text{\# of ml in sample}}$$

E. Cleanup

1. Cleanup after Sample Preparation:

    1. Disassemble all sampling glassware, and gather all other equipment (forceps, ampoule breaker, tray, graduated cylinders, etc.).
    2. Put on rubber gloves.
    3. Wash everything in hot, soapy water.
    4. Rinse.
    5. Place all membrane filter equipment on a large piece of aluminum foil and place in tray of autoclave. Cover equipment loosely with foil.
    6. Place tray in autoclave.
    7. Add approximately three cups of distilled water to autoclave.
    8. Close autoclave door.
    9. Turn on autoclave. The setting should be as follows: 1200C at 15 psi for 15 minutes.
    10. After autoclave is cool, open door.
    11. Remove tray.
    12. Seal glassware with foil.
    13. Remove glassware from autoclave.
    14. Drain autoclave by inserting baster into autoclave and removing water.

2. Cleanup after Sample Reading:
    1. Place petri dishes in biohazard bag.
    2. Add one pint (2 cups) of distilled water to bag.
    3. Place rubber band loosely around top of bag.
    4. Place bag on autoclave tray.
    5. Place tray in autoclave.
    6. Add approximately three cups of distilled water to autoclave.
    7. Close autoclave door.
    8. Turn on autoclave. The setting should be as follows: 1200C at 15 psi for 15 minutes.
    9. After autoclave is cool, open door.
    10. Remove tray.
    11. Tighten rubber band.
    12. Place bag in trash.
    13. Drain autoclave by inserting baster into autoclave and removing water.

III. Quality Control Program

There is no quality control program possible in the water lab. Any quality control program would require sending a sample to a laboratory using the membrane filter technique and simultaneously testing part of the same sample in the Acton Water Lab. Then the results of the two tests on the same sample should be compared.

IV. Data Analysis

The water testing laboratory provides information about total and fecal coliform levels in natural and chlorinated waters. The natural waters are brooks and streams flowing through Acton. Fecal coliform levels indicate contamination from fecal material of animals or septic systems with breakout of sewage from the systems. Testing for fecal coliform levels is important in determining if there are septic problems in various parts of Acton. Total coliform testing of the natural waters is not necessarily indicative of failed septic systems because total coliforms can be found in non-fecal sources (plants and soil). Since brooks and streams flow over soil and plants, it is natural for some total coliforms to be present. Therefore, if the goal is information about septage flowing out of septic systems and into natural waters, fecal Coliform testing is appropriate because the only source of fecal coliforms are the intestines of warm-blooded animals, including humans.

Swimming pools, on the other hand, contain chlorinated water. The purpose of the chlorination of swimming pool waters is to disinfect the water so that no microbiological activity exists in the waters. Therefore, drinking water standards are appropriate for chlorinated swimming pools. Drinking water standards require testing for total coliforms.

Data analysis consists of recording test results in the log book. Studying results of testing at one location over time can reveal microbiological activity in the water at a particular location. Such historical records can show the health of particular bodies of water and their watersheds.

Results of testing on one particular occasion can reveal if tested waters are so polluted that immediate action is necessary to prevent a public health threat. The following table contains the action levels for natural and chlorinated swimming waters.

	Total Coliform Count	Fecal Coliform Count
Natural Waters		200 CFU/100 ml*
Swimming Pools	0 CFU/100 ml**	

**From Massachusetts Surface Water Quality Standards,* 1990, p. 10, 80.
***From *Acton Rules and Regulations,* Article 9 (Minimum Sanitation Standards for Private and semipublic Water Supply), Section 9-3.2.2.

V. Bibliography

Standard Methods for the Examination of Water and Wastewater, 17th edition, 1989.
Massachusetts Surface Water Quality Standards, 1990
Acton Rules and Regulations, Article 9
105 CNM 435.000 Minimum Standards for Swimming Pools (State Sanitary Code: Chapter V)
Water Quality Parameters, National Environmental Health Association
Health and Safety Hazards at Recreation Areas, National Environmental Health Association.
Prevention of Injury and Disease at Swimming Areas, National Environmental Health Association.

Town of Acton
Wastewater Management Plan

9-21-95

To: Doug Halley
From: Sharon Mastenbrook
Re: nitrate testing

It is possible to test groundwater samples with a Hach kit. The range of the kit is 0-50 mg/I. The EPA drinking water upper limit is 10 mg/I. Personal safety supplies to support testing would probably include nitric acid to wash test kit test tubes, pan for holding nitric acid solution (1: 1) for washing, goggles or glasses, mask (?paper), and gloves. Demineralized water is also needed (approximately $25.00).

In addition, a bailer is needed to collect samples. Ben Meadows sells PVC bailers for $27 each. 600 ft of cord costs $29.25. If aeration of sample is a problem, then a bottom emptying device is necessary for each bailer ($15 each).

Cole-Parmer sells PVC bailers for $22.50 each. Cord is $23.25 for 100 ft. A bottom emptying device is $17.25 each.

If only one bailer is purchased, then it is necessary to have a procedure to clean the bailer after each use Special soap costs approximately $30.00 (at least a year's supply).

Therefore, it seems possible to start a nitrate-testing program with an approximate cost as outlined below.

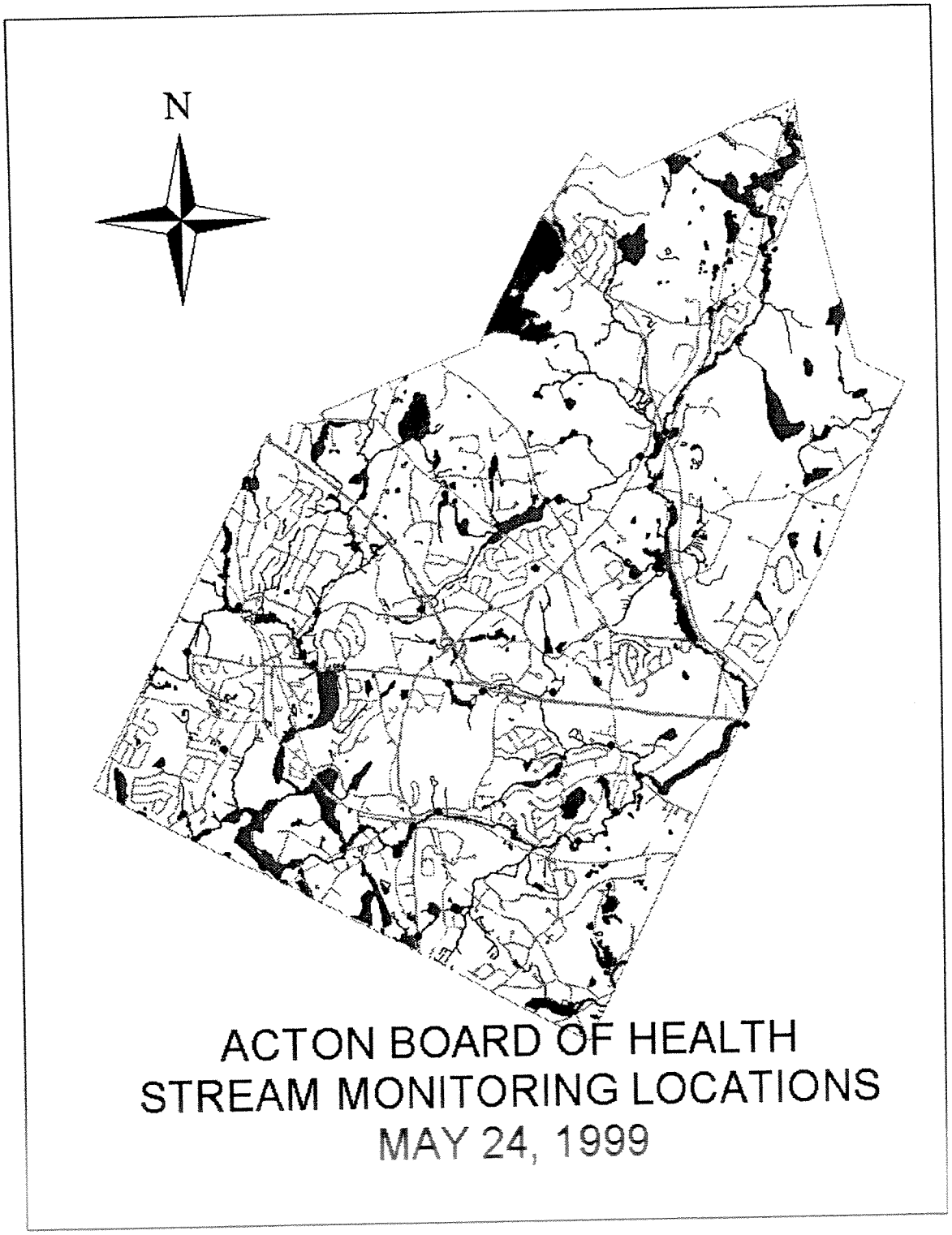
Equipment	**Individual Cost**	**Cost for One Year**
Hach test kit	42.50/100 tests	42.50
Support equipment (nitric acid, pan, goggles or glasses, mask, gloves)	?200.00	200.00
bailer (PVC)	22.50	450.00 (for 20 wells)
cord	29.25 (600 ft)	29.25
demineralized water	?25.00/5 gal	*?50.00*

It is possible to buy one bailer and wash it after each sample collection. Washing would include taking two buckets into the field. One would have a special soap (approximately $30.00 for at least a year's use) and the other would have demineralized water. After each sample taking, the bailer would have to be washed in the soap and then rinsed in the water. The bailer is three feet long so the washing process needs to include a bucket big enough to wash at least half of the bailer so that after washing one end the bailer could be turned over and washed again from the other end.

In addition, there is labor required to do the testing and monitor the equipment. Each test takes about around 5 minutes once the sample is in the sample bottle. The test tubes used to test for nitrates need to be cleaned with nitric acid between use.

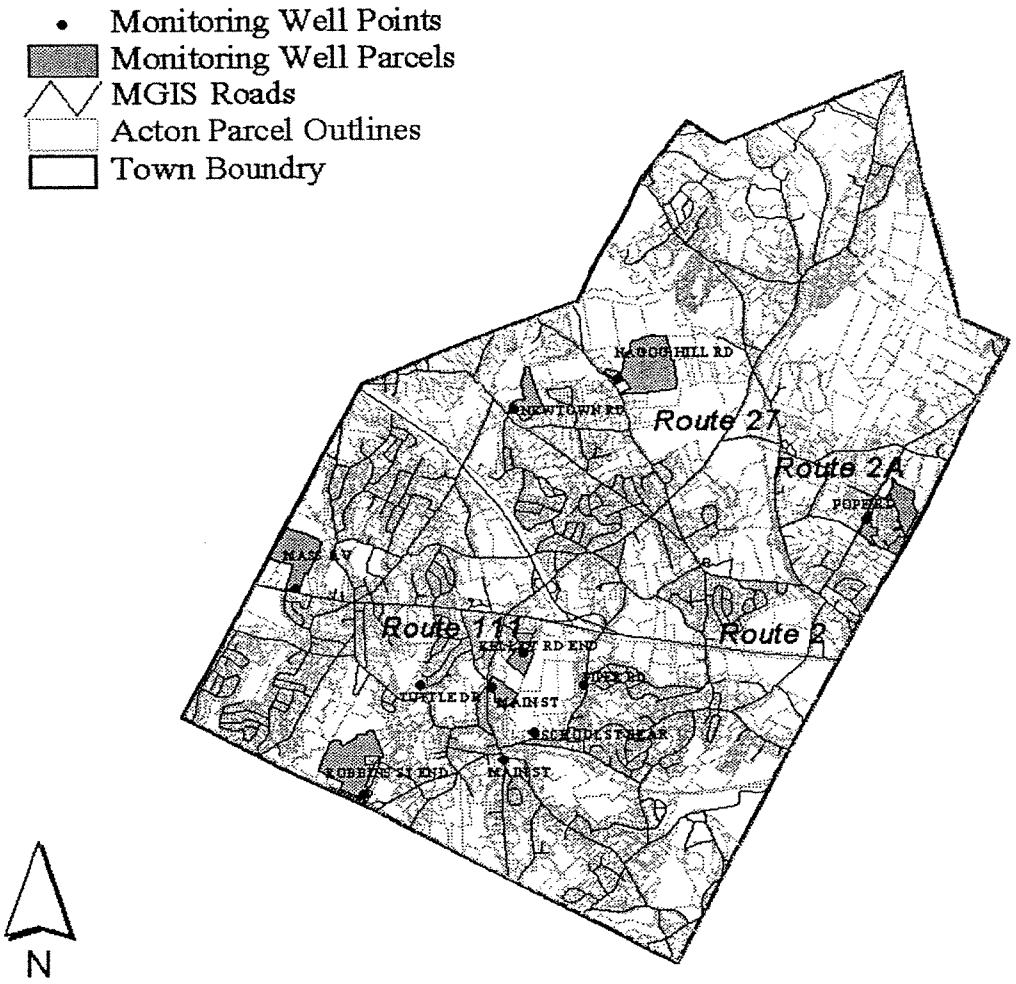
Water samples can be taken and tested up to 24 hours later if they are refrigerated.

ATTACHMENT "F"


N
ACTON BOARD OF HEALTH
STREAM MONITORING LOCATIONS
MAY 24, 1999

ATTACHMENT "G"

Monitoring Wells 1998



ATTACHMENT "H"

Town of Acton
Wastewater Management Plan

9-21-95

To: Doug Halley
From: Sharon Mastenbrook
Re: nitrate testing

It is possible to test groundwater samples with a Hach kit. The range of the kit is 0-50 mg/I. The EPA drinking water upper limit is 10 mg/I. Personal safety supplies to support testing would probably include nitric acid to wash test kit test tubes, pan for holding nitric acid solution (1: 1) for washing, goggles or glasses, mask (?paper), and gloves. Demineralized water is also needed (approximately $25.00).

In addition, a bailer is needed to collect samples. Ben Meadows sells PVC bailers for $27 each. 600 ft of cord costs $29.25. If aeration of sample is a problem, then a bottom emptying device is necessary for each bailer ($15 each).

Cole-Parmer sells PVC bailers for $22.50 each. Cord is $23.25 for 100 ft. A bottom emptying device i $17.25 each.

If only one bailer is purchased, then it is necessary to have a procedure to clean the bailer after each use Special soap costs approximately $30.00 (at least a year's supply).

Therefore, it seems possible to start a nitrate-testing program with an approximate cost as outlined below.

Equipment	**Individual Cost**	**Cost for One Year**
Hach test kit	42.50/100 tests	42.50
Support equipment (nitric acid, pan, goggles or glasses, mask, gloves)	?200.00	200.00
bailer (PVC)	22.50	450.00 (for 20 wells)
cord	29.25 (600 ft)	29.25
demineralized water	?25.00/5 gal	*?50.00*

It is possible to buy one bailer and wash it after each sample collection. Washing would include taking two buckets into the field. One would have a special soap (approximately $30.00 for at least a year's use) and the other would have demineralized water. After each sample taking, the bailer would have to be washed in the soap and then rinsed in the water. The bailer is three feet long so the washing process needs to include a bucket big enough to wash at least half of the bailer so that after washing one end the bailer could be turned over and washed again from the other end.

In addition, there is labor required to do the testing and monitor the equipment. Each test takes about around 5 minutes once the sample is in the sample bottle. The test tubes used to test for nitrates need to be cleaned with nitric acid between use.

Water samples can be taken and tested up to 24 hours later if they are refrigerated.

American Drilling Services, Inc.

- Environmental Drilling
- Groundwater Monitor Wells
- Structural Borings Logs

Geo-technical Drilling
Irrigation Wells
40 Hr. OSHA Approved Training

April 12, 1995

Acton Board of Health
Acton, MA

ATTN: Heather Marceau

American Drilling Services, Inc.
Bob Francis

RE: Professional drilling services in Acton, MA

JOB DESCRIPTION: The installation of Twenty (20) 2" wells to 15'Estimate based on normal auger drilling.

Mobilization/Demobilization	$250.00
CME Drill rig w/crew 4.5 @ $ 875.00/day	$3937.50
day rate based on 8 hr maximum on site time	
Steam Cleaner charge 4.5 @ $ 50.00/day	$ N/C
2" PVC screen 200' @ $ 6.00/ft	$1200.00
2" PVC riser 1001 @ $ 3.50/ft	$350.00
2" PVC bottom plug 20 @ $ 5.00/ea	$100.00
Locking grippers 20 @ $ 16.00/ea	$320.00
7" x 10" Boltdown road box 20 @ $ 45.00/ea	$900.00
Filter sand 1001b bags 60 @ $ 12-00/bag....	$720.00
Redi-mix concrete 801b bags 10 @ $ 10.00/bag	$100.00
Bentonite chips 501b pail 10 @ $ 40.00/pail	$400.00
ESTIMATE TOTAL	$8277.50

Massachusetts sales tax of 5% will be charged to materials sold, estimated at (4090.00) = $ 204.50

Town of Acton
Wastewater Management Plan

SKILLINGS & SONS
ARTESIAN WELLS, PUMPS AND FILTERS
269 PROCTOR HILL ROAD HOLLIS, NH 03049
PHONE (603) 889-5009 1 (800) 441-6281
FAX (603) 465-3512

TOWN OF ACTON
BOARD OF HEALTH
472 MAIN STREET
ACTON, MA 01720

This is the pricing for drilling of approximately 20 borings to 20 feet each. Each boring will be constructed by drilling of a 4.25" HSA hole, sampling as required, setting of a 2" PVC FJ monitor well, each with 10 feet of slotted screen and 10 feet of 2" PVC riser to grade , and a curb box installed at grade. Annular space surrounding the screen face plus one foot will be with #0 Morie sorted silica sand, then bentonite chips to grade less two feet, then a curb box concreted in at grade.

Cuttings will be contained and disposed of as directed. I have figured that some time will be spent dealing with this. Sites are scattered throughout the town, so some time is needed for moves, site locating, etc. I have assumed adequate access/regress, dig safe by others, traffic control if needed by others, and all work is level "D" or less, Any applicable sales taxes, permit fees, etc. if applicable are additional,

Based on above, the costs are estimated to be:

Mob/demob.....	$205.00
Three days.....AD-11 HSA drill and crew of two @ $900,00/8hr. day (O/T @ .....$112.50/hr,)	$2,700.00

Materials:

20 pcs. 2" x 10' PV'C Sch 40 FJ riser @ $29.99/pc	$ 580.00
20 pcs. 2" x 10' x .010" slotted screen, P@IC FJ @ $57,50/pc	$1,150.00
20 ea. 2" FJ cap x xplug w/lock @ $19.00/ set	$ 380.00
20 ea. 6" skirted road boxes (load type) @ $71.00 ea.	$1,420.00
5,000 lbs. sorted silica sant @ $.15/ bag	$ 750.00
50 bags bentonite chips @ $15.00/bag	$ 750.00
20 bags Sakret mix @ $10.00/bag	$ 200.00
5 each cases sample jars @ $19.00/case	$ 95.00
Total materials	$5,325.00
Total job Estimate	$8,230.00

If you have any questions, please call at you